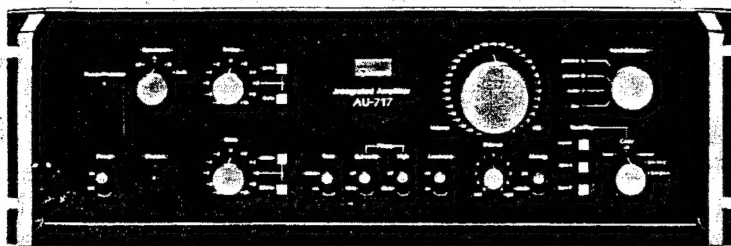


SERVICE MANUAL

INTEGRATED STEREO AMPLIFIER

SANSUI AU-517/717



SPECIFICATIONS

AU-517

Power output
Min. RMS, both channels driven, from 20 to 20,000 Hz, with
no more than 0.025% total harmonic distortion
65 watts per channel into 8 ohms

Load impedance 8 ohms
Power bandwidth 20 to 20,000 Hz at or below
rated min. RMS power output
and total harmonic distortion

Total harmonic distortion (POWER AMP IN)
less than 0.025% at or below
rated min. RMS power output

Intermodulation distortion (70 Hz: 7 kHz = 4:1 SMPTE method)
less than 0.025%

Frequency response (at 1 watt) (POWER AMP IN)
0 to 20,000 Hz +0 dB -3 dB

RIAA curve deviation (PHONO) +0.2 dB -0.2 dB
(20 to 20,000 Hz)

Damping factor approximately 60 at 8 ohms
load

Input sensitivity and impedance (1 kHz, for rated power output)
PHONO 2.5 mV/47 kilohms
(Max. input capability: 320 mV at 1 kHz, less than 0.01%
harmonic distortion)

AUX, TAPE 150 mV/47 kilohms

Output level (1,000 Hz)
TAPE REC (pin jack) 150 mV/47 kilohms

PRE OUT 1 V/47 kilohms

Channel separation (1 kHz, at rated power output)
PHONO better than 60 dB

AUX better than 65 dB

Hum and noise (short-circuit, A-network)
PHONO 78 dB

AUX 100 dB

Controls
BASS +10 dB (50 Hz)

TREBLE +10 dB (15 kHz)

SUBSONIC FILTER -3 dB (16 Hz), 6 dB/oct

LOUDNESS (-30 dB) 9 dB at 50 Hz
7 dB at 10 kHz

Power requirements
Power voltage 100, 120, 220, 240V (50/60Hz)
120V (Usable 110 - 130V)
60 Hz (for U.S.A. & Canada
only)

Power consumption
Maximum consumption 660 watts

Rated consumption 345 watts 420 VA

Dimensions 430 mm (16-15/16") W
168 mm (6-5/8") H

389 mm (15-3/8") D

Weight 16.5 kg (36.4 lbs) net
18.5 kg (40.8 lbs) packed

* Design and specifications subject to change without
notice for improvements.



SANSUI ELECTRIC CO., LTD.

1. SPECIFICATIONS

AU-717

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.025% total harmonic distortion
85 watts per channel into 8 ohms

Load impedance 8 ohms

Power bandwidth 20 to 20,000 Hz at or below rated min. RMS power output and total harmonic distortion

Total harmonic distortion (POWER AMP IN)

less than 0.025% at or below rated min. RMS power output

Intermodulation distortion (70 Hz: 7 kHz = 4:1 SMPTE method)

less than 0.025%

Frequency response (at 1 watt) (POWER AMP IN)

0 to 200,000 Hz +0 dB -3 dB

RIAA curve deviation (PHONO) +0.2 dB -0.2 dB (20 to 20,000 Hz)

Damping factor approximately 60 at 8 ohms load

Input sensitivity and Impedance (1 kHz, for rated power output)

PHONO 2.5 mV/47 kilohms

(Max. input capability; 350 mV at 1 kHz, less than 0.01% total harmonic distortion)

AUX, TAPE 150 mV/47 kilohms

Output level (1,000 Hz)

TAPE REC (pin jack) 150 mV/47 kilohms

PRE OUT 1 V/47 kilohms

Channel separation (1 kHz, at rated power output)

PHONO better than 60 dB

AUX better than 65 dB

Hum and noise (short-circuit, A-network)

PHONO 78 dB

AUX 100 dB

Controls

BASS ± 10 dB (50 Hz)

Tone selector 200, 400 Hz

TREBLE ± 10 dB (15 kHz)

Tone selector 3, 6 kHz

SUBSONIC FILTER -3 dB (16 Hz), 6 dB/oct

HIGH FILTER -3 dB (10 kHz), 6 dB/oct

MUTING -20 dB

LOUDNESS (-30 dB) 9 dB at 50 Hz

7 dB at 10 kHz

Power requirements

Power voltage 100, 120, 220, 240V (50/60 Hz)

120V (Usable 110 - 130V)

60 Hz (for U.S.A. & Canada only)

Power consumption

Maximum consumption 735 watts

Rated consumption 425 watts 500 VA

Dimensions

430 mm (16-15/16") W

168 mm (6-5/8") H

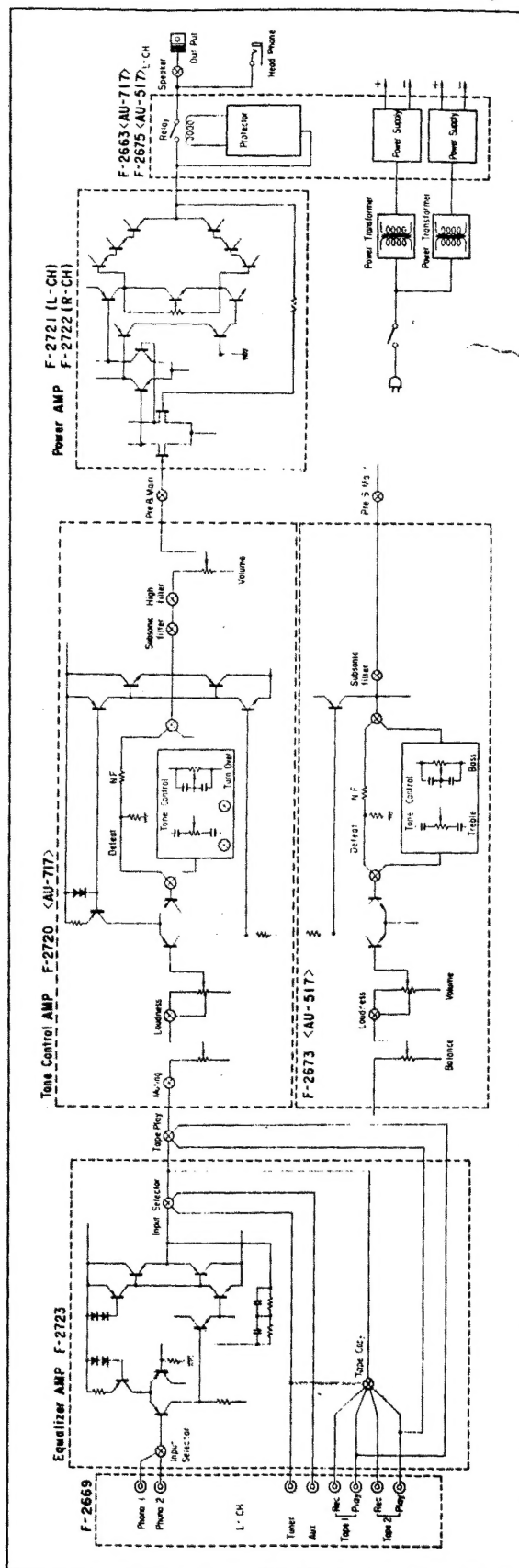
389 mm (15-3/8") D

Weight

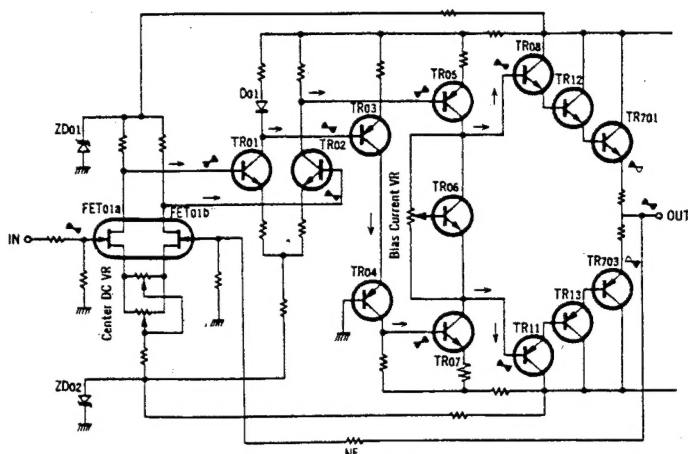
17.8 kg (39.2 lbs) net

19.8 kg (43.7 lbs) packed

2. BLOCK DIAGRAM



3. ADVANTAGE AND OPERATION OF POWER AMPLIFIER CIRCUITRY SECTION



3-1. Advantage

- ◇ There is necessity not to decrease the phase response till DC range in order to increase the music signal response of extremely low frequency range. Therefore, this amplifier is employing no capacitors except ones for phase compensation, and has an almost perfect transient characteristics.
- ◇ The first stage FET (2SK97) is a dual FET of even characteristics and has a large G_m and no-leakage current at normal temperature.
To avoid the influence by temperature drift, such as center voltage (0V) deviation, this FET is used as differential amplifier and operates at cross point which is the optimum point of drain current (at about 3mA) against the temperature drift.
- ◇ Transistors, TR05 and TR07, the push-pull pre-driver stage functions as current differential amplifier that the stabilized operation can be obtained. In addition, the collector current of these transistors is enough high to make linearity excellent.
- ◇ Since this Amplifier employs phase advancer circuits [C06, C08, C15, R29, C16 and R30], which have not been frequently used, to compensate the phase characteristics on high frequency range and is also made to have enough

current on each stage to increase the through-rate, the performance on high frequency range is conspicuously improved.

- ◇ To avoid the voltage deviation, regulated power supply circuit composed of ZD01, ZD02 is employed.

3-2. Operation

The use of differential amplification at first stage dual FET, (FET01, FET02) and connection of the FET to the differential amplifier composed of TR01, TR02, make possible to obtain enough gain and remarkable low distortion.

The output signals of TR01 and TR02 are antiphase. The output signal of TR02 adds to TR05, on the other hand, the output phase of TR01 is inverted by TR03, then, it becomes input signal of TR04 and TR07 which are cascoded connection. The output signals at TR05 and TR07 are inphase that the operation of this stage is push-pull drive and current differential amplification. The power amplifier of the final stage is composed of SEPP (Single Ended Push-Pull) symmetry complementary in 3-stage darlington connection type. TR09 and TR10 are composing current limiter circuit to protect power transistor from break-down by overload.

4. ADJUSTMENTS

4-1. Driver Circuit Board Adjustments (See the picture of top view on page 3.)

Note: 1. Master Volume.....Minimum
2. Room Temperature.....

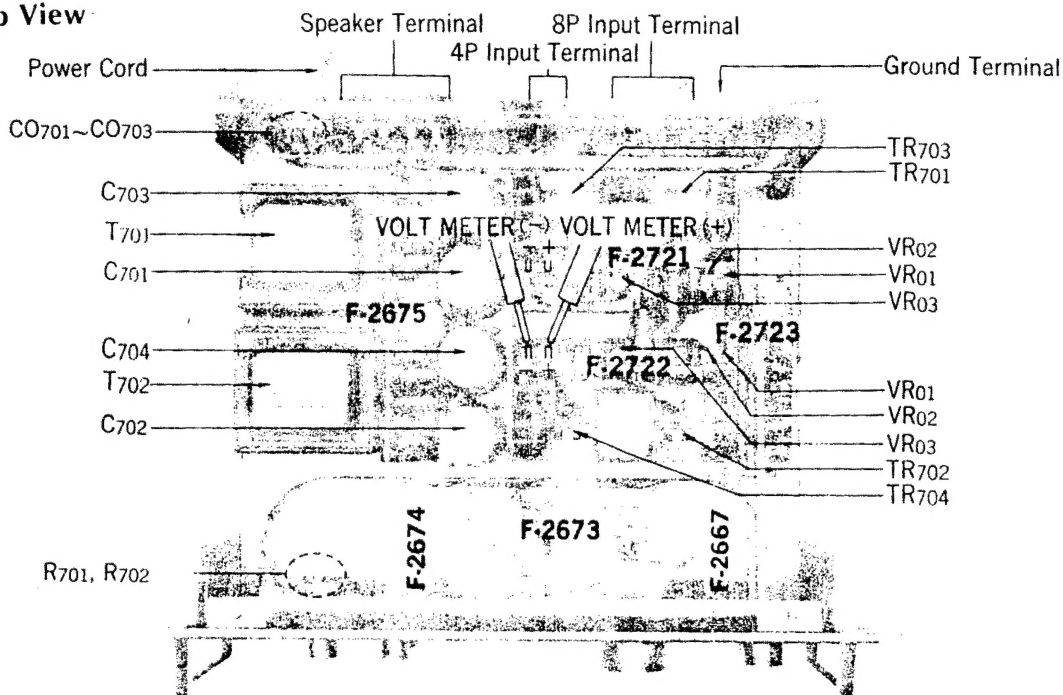
3. For adjustment, run the unit for more than 3 minutes after the power is switched on.

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	DC 0V L-CH	DC Volt Meter	Speaker Terminal	F-2721 VR01, VR02	DC 0V \pm 5mV	<ul style="list-style-type: none"> ◦ Set VR01 and VR02 to center position. ◦ Then, for the purpose of proceeding the accurate adjustment, set the voltage to 0 volt by VR01 first and VR02 next.
2.	DC 0V R-CH	Same as above	Same as above	F-2722 VR01, VR02	DC 0V \pm 5mV	
3.	Bias Current L-CH	Same as above	TP Terminal (+) (-) of F-2721	F-2721 VR03	DC 20mV \pm 1mV	<ul style="list-style-type: none"> ◦ By turning VR03 counterclockwise, the bias current is decreased gradually.
4.	Bias Current R-CH	Same as above	TP Terminal (+) (-) of F-2723	F-2722 VR03	DC 20mV \pm 1mV	

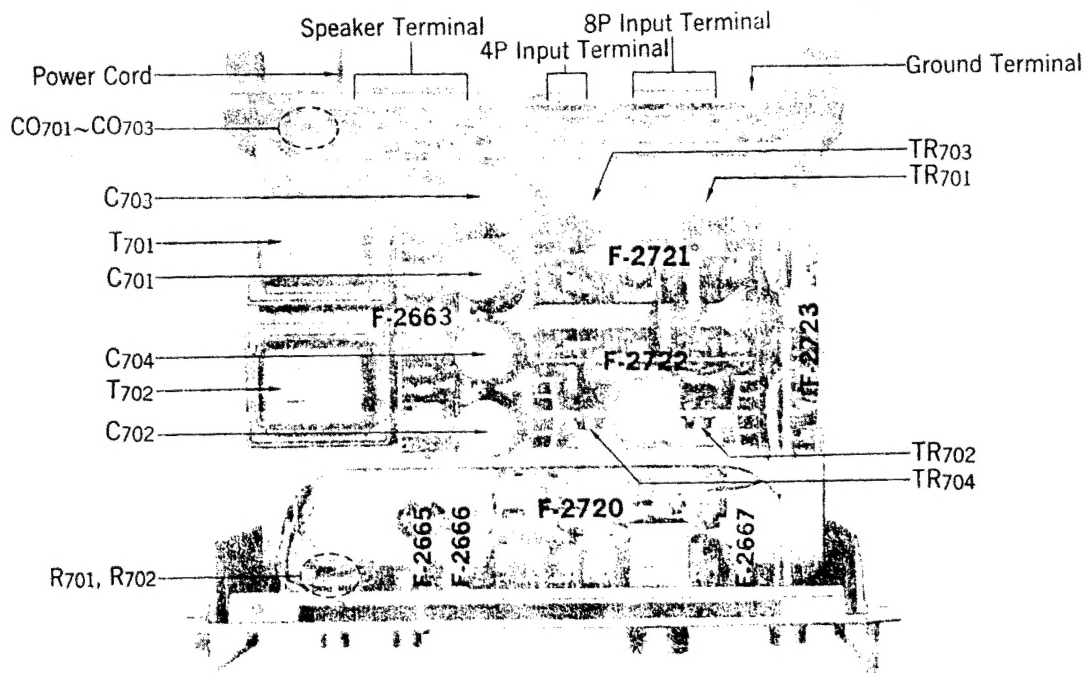
5. OTHER PARTS

5-1. Top View

<AU-517>



<AU-717>



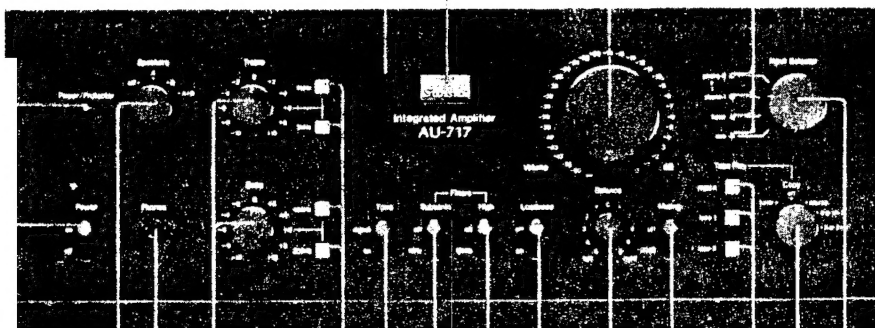
Parts List <AU-517/717>

Parts No.	Stock No.	Description
C703	0A37H01	0.01 μ F 150V M.C.
C701, 714	0602109	1.0 μ F 100V M.C.
R701, 702	0202221	220 Ω 2W N.I.R.
CO701~703	2450040	AC Outlet XX
	5066280	AC Outlet EU, BS
	2290190	Speaker Terminal
	3800010	Power Cord XX
	3800190	Power Cord EU
	3800320	Power Cord BS
	2300040	Power Fuse Holder XX
	2300090	Power Fuse Holder EU, BS
	2410091	Voltage Selector Plug XX
	2410830	Voltage Selector Socket XX

Parts No.	Stock No.	Description
	2411240	Voltage Selector SW EU, BS
	2230032	Ground Terminal
AU-517 Only		
TR701, 702	0306450-2	25C1403A R.O. Y } Transistor
TR703, 704	0300830-2	25A745A R.O. Y }
C701~704	0559518	12000 μ F 63V E.C.
T701, 702	4002590	Power Transformer XX
	4002594	Power Transformer EU, BS
	4002592	Power Transformer UL, CSA
F701	0432270	3.5A 125V } Power Fuse XX
	0432500	7A 125V }
	0435140	2.5A Power Fuse EU, BS

Parts No.	Stock No.	Description
AU-717 Only		
TR701, 702	0305840-2	25C1111 R.O. Y } Transistor
TR703, 704	0300520-2	25A747 R.O. Y }
C701~704	0559520	15000 μ F 63V E.C.
T701, 702	4002580	Power Transformer XX
	4002584	Power Transformer EU, BS
	4002582	Power Transformer UL, CSA
F701	0432290	5A 125V } Power Fuse XX
	0434060	10A 250V }
	0435150	3.15A Power Fuse EU, BS

5-2. Front View <AU-717>



Parts List <AU-517/717>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	{5318850 1015170.1	N-7 Type Knob 250kΩ (MN) × 2 Balance Volume L=25 P=5	10	{5326620 5286721 1131400	Push Switch Knob Knob Guide Push Switch, Tape Play	AU-717 Only		
2	{5318840 1015230.1	K-7 Type Knob 100kΩ (C) × 2 Treble, Bass Volume L=25 P=7	11	2430290	Head Phone Jack	6	{5326611 1171130	Lever Switch Knob Lever Switch, Loudness
3	{5318840 1101780.1	K-7 Type Knob Rotary Switch, Speakers	12	5006670	Banquet	7	{5326611 1171130	Lever Switch Knob Lever Switch, Subsonic Filter
4	{5318840 1190410	K-7 Type Knob Rotary Switch, Tape Copy	13	5336400	Sansui Badge	15	{5318840 1090280	H-7 Type Knob 150kΩ × 2 5kΩ × 2 Volume L=25 P=9
5	{5318830 1190410	I-7 Type Knob Rotary Switch, Input Selector	14	{0319110 5507070	Light Emitted Diode Leg	16	{5326611 1171120	Lever Switch Knob Lever Switch, Muting
8	{5326611 1171150	Lever Switch Knob Lever Switch, Tone Defeat	AU-517 Only			17	{5326611 1171130	Lever Switch Knob Lever Switch, High Filter
9	{5326611 1171630 1171610	Lever Switch Knob Lever Switch, Power Lever Switch, Power EU, BS	6	{5326611 1171120	Lever Switch Knob Lever Switch, Loudness	18	{5326620 5286721 1131400	Push Switch Knob Knob Guide Push Switch, Turn Over
			7	{5326611 1171120	Lever Switch Knob Lever Switch, Subsonic Filter	19	7007570	Front Panel Ass'y
			15	{5318860 1090250	H-7 Type Knob 150kΩ × 2 Volume L=25 P=7	20	5058730	Bottom Plate
			19	7007580	Front Panel Ass'y	21	0319110	Light Emitted Diode
			20	5058740	Bottom Plate			

Figures

Connectors & Pin Ass'y

Connectors

Type A (3~10 pins)	Type B (2~6 pins)	Stock No.
		2 Pins 2420450
		3 Pins 2420460
		3 Pins (RED) 2420650
		4 Pins 2420470
		5 Pins 2420480
		6 Pins 2420490

NOTE: Since stock number of female connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector

Pin Ass'y

Type A (3~10 pins)	Type B (3~10 pins)	Type C (3~10 pins)
Type D (2~6 pins)	Type E (2~6 pins)	Type F (2~6 pins)

Abbreviations

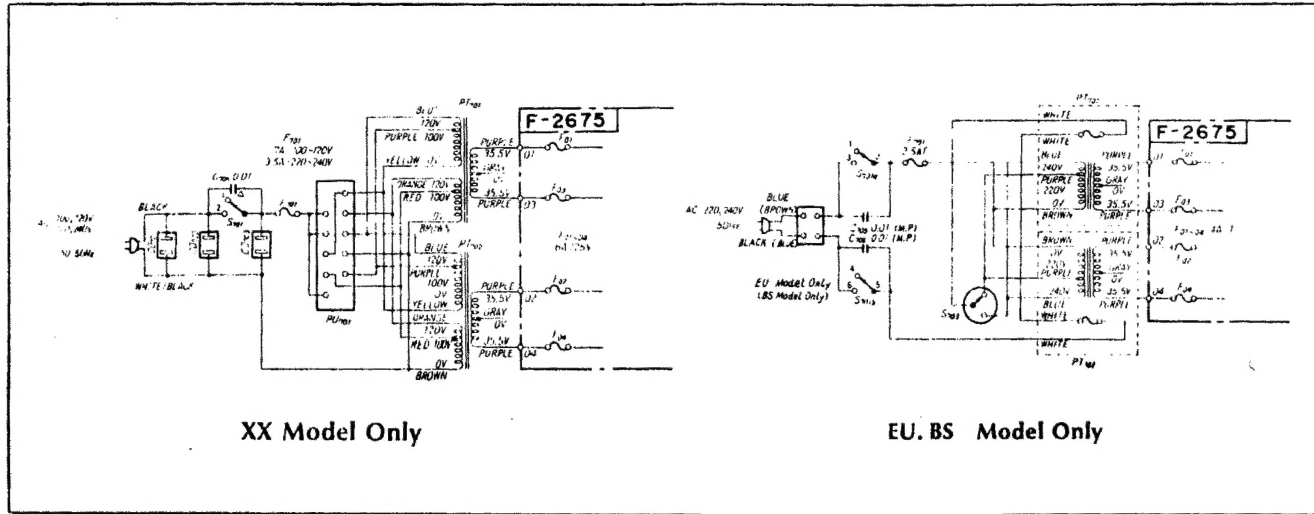
C.R. : Carbon Resistor	E.C. : Electrolytic Capacitor
S.R. : Solid Resistor	BP.E.C.: Bi-Polar Electrolytic Capacitor
Ce.R. : Cement Resistor	C.C. : Ceramic Capacitor
M.R. : Metal Film Resistor	MI.C. : Mica Capacitor
F.R. : Fusing Resistor	O.C. : Oil Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
M.C. : Mylar Capacitor	T.C. : Tantalum Capacitor

7. SCHEMATIC DIAGRAM

7-1. AU-517 Power Supply Section

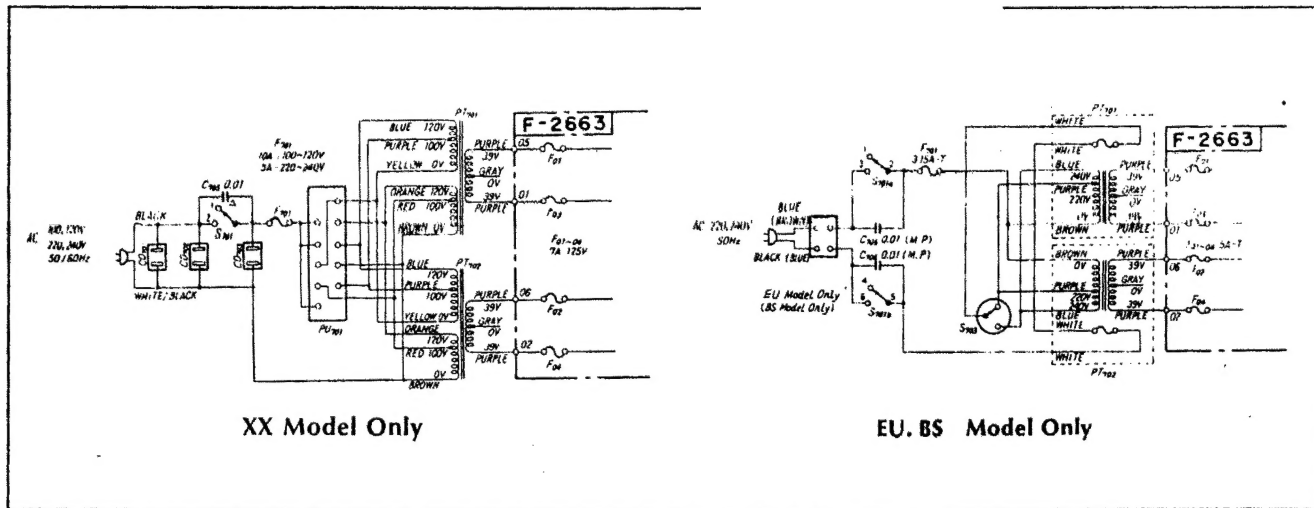
XX EU. BS Model Only

- La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten
- Design and specifications subject to change without notice for improvement



7-2. AU-717 Power Supply Section

XX EU. BS Model Only



NOTE:

AS to U.L., C.S.A., B.S., ES and XX marked in the Parts Lists, note the followings:

U.L., C.S.A. Approved parts used in the unit which is applicable to the U.S. and Canada under safety standard.

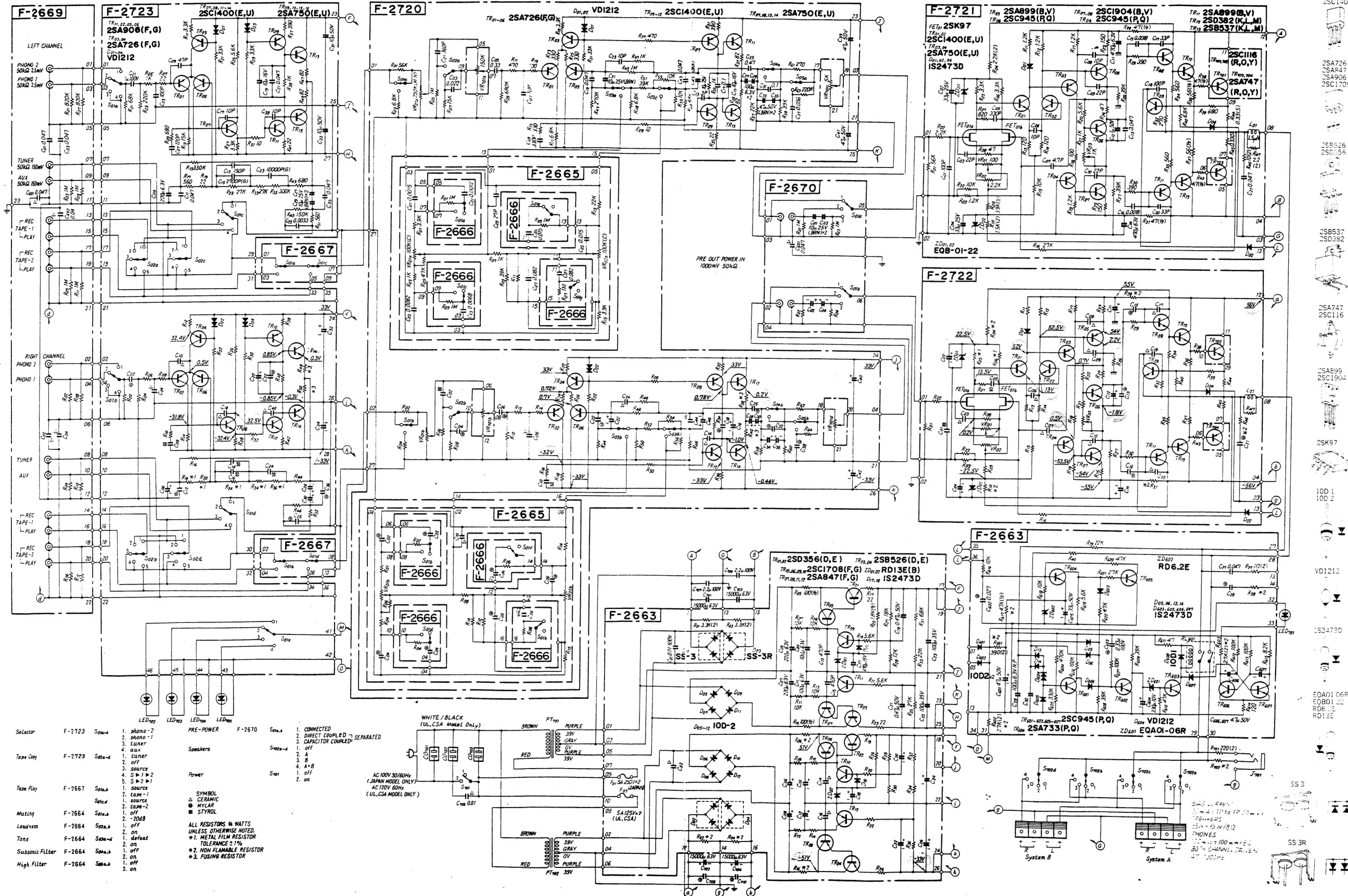
B.S. Approved parts used in the unit which is applicable to British under safety requirement.

E.U. Approved parts used in the unit which is applicable to Sweeden, Denmark, Norway, Finland, West Germany, and Switzerland under safety requirement.

XX Parts used in the unit which is applicable to other countries excepting mentioned above.

※ In parts lists, parts with no above mark in of "Description" are all the same as XX marked parts.

7-4. AU-717



- 2SA733
2SA750
2SC945
2SC1222
2SC1400

- 2SA726
2SA847
2SA906
2SC1708

- 2SB526
2SD556
6

- 2SB537
2SD382
503

- 2SA747
2SC116

- 2SA899
2SC1904

- 2SK97

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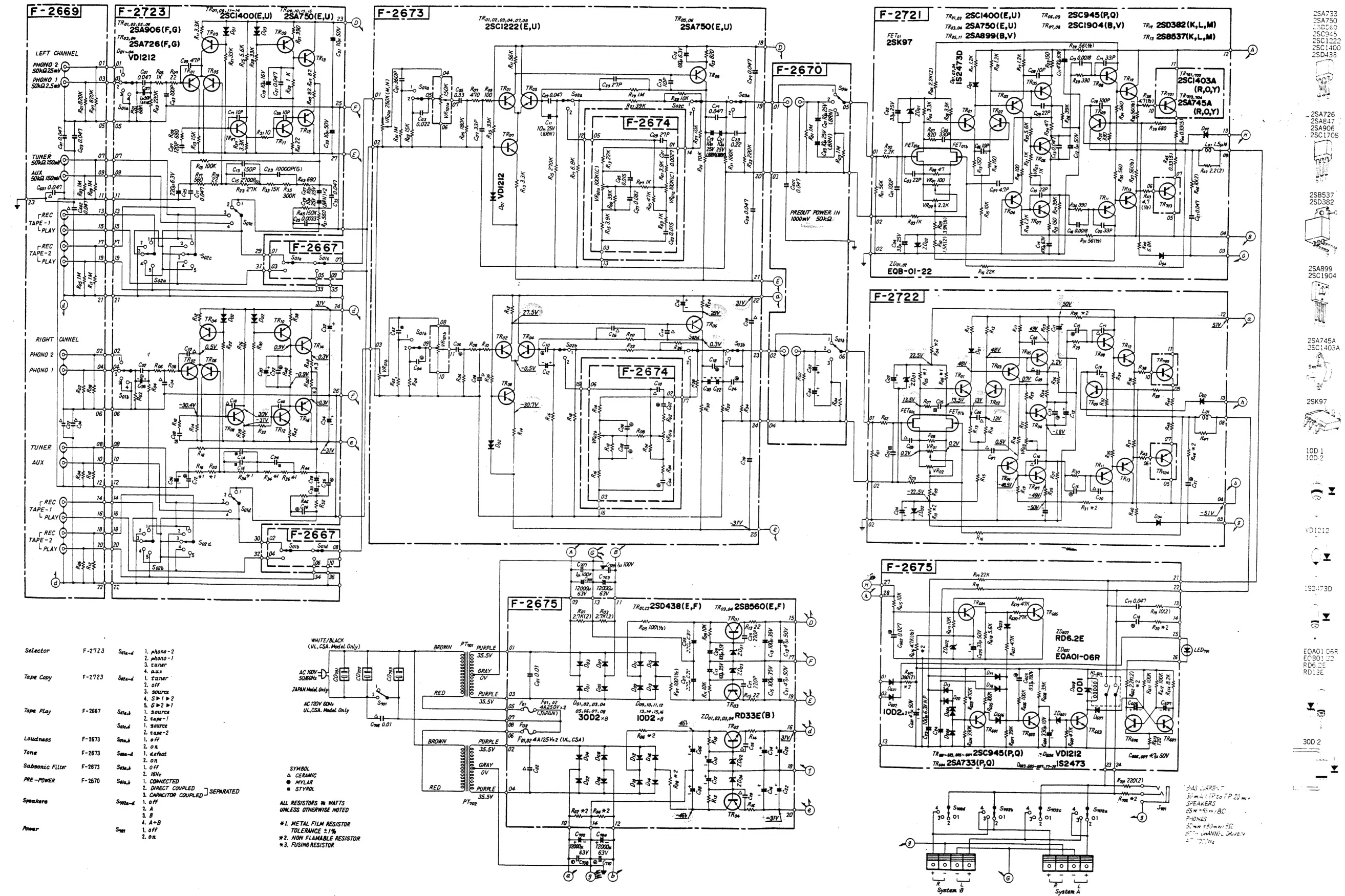
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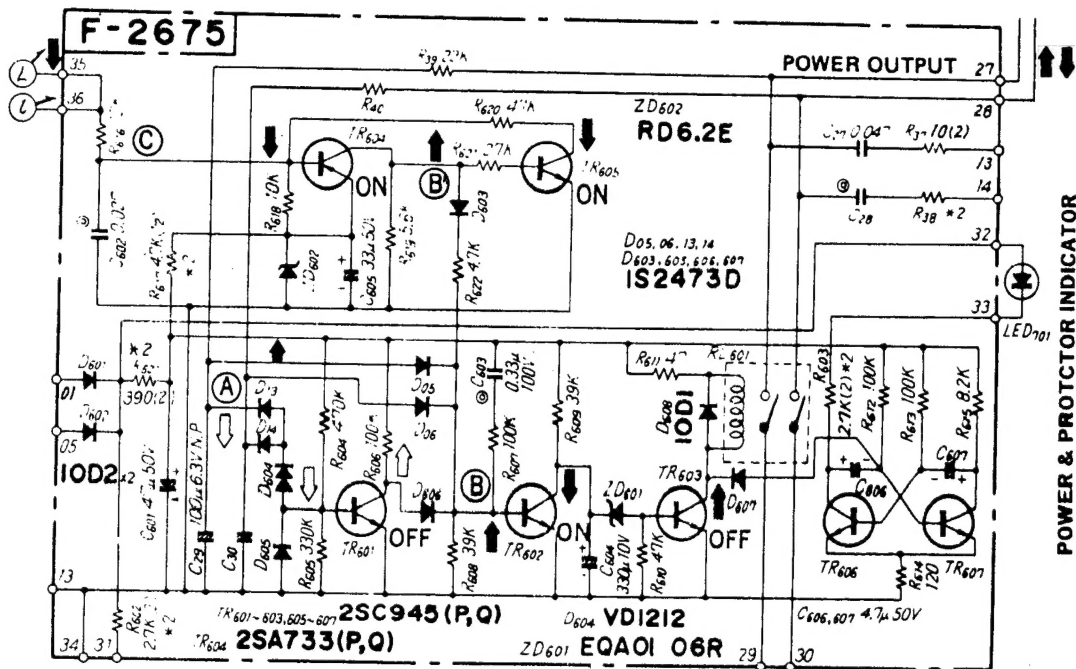
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7-3. AU-517



8. OPERATION OF PROTECTOR CIRCUIT

This protector circuit contains two functions at abnormal condition; a speaker protector circuit against DC voltage appearing at output, and speaker protector circuit against over-current.



A. Speaker Protection Circuit against DC voltage appearing at output ①

1. When an abnormal negative voltage appears at output ①, TR601 turns off, TR602 turns on and TR603 turns off so that the relay, RL601, keeps off in order to protect loudspeakers from break-down.
2. While the relay, RL601, keeps OFF, zero voltage (center voltage) controlling TR607 through D607 will increase, resultly the LED701 as protector indicator, starts flickering.
3. When abnormal positive voltage appears at output ①, the voltage is supplied to TR602 directly, and the operation of the protector circuit is same as above mentioned 1.

B. Speaker Protection Circuit against abnormal over-current

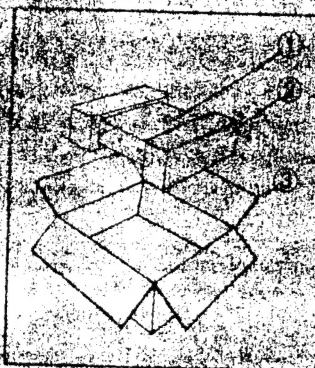
1. At the moment when abnormal excessive current flows into power transistors, a transistor (TR09) detecting excessive over-current, on power stage becomes ON.
2. Then, DC voltage at ② decreases, resultly TR604 turns on, and positive certain voltage appears at ③.
3. As mentioned above, when TR602 turns on, the relay, RL601, keeps OFF; a certain positive voltage at ③ turns on TR605 too, resultly collector voltage of TR605 decreases and its collector voltage keeps a certain voltage at ④ simultaneously.
4. By keeping a certain DC voltage at ④, the LED701 as protector indicator continues flickering, even though all circuits work completely.

C. Operation of astable multivibrator

1. When control (bias) voltage is not supplied to the base of TR607 in abnormal condition, TR606 and TR607, on astable multivibrator repeat turning (switching) on and off alternately each other by charging and discharging of capacitors, C606 & C607, resultly, the LED701 as protector indicator continues flickering.
2. When the relay, RL601 is turned on, base voltage of TR607 becomes zero volt through D607 and TR606 becomes ON, resultly LED701 as power indicator lights up.

9. PACKING LIST

Part No.	Stock No.	Description
1	9116670	Vinyl Cover
2	9028020	Styrofoam Packing (L)
	9028030	Styrofoam Packing (R)
3	9009710	Carton Case (AU-717)
	9009708	Carton Case (AU-517)



10. ACCESSORY PARTS LIST

Stock No.	Description
9209520	Operating Instructions (AU-517)
9209560	Operating Instructions (AU-717)
9192082	Hexagon Wrench (1.5mm)
9116580	Vinyl Bag For Wrench
9237540	Schematic Diagram (AU-517)
9237560	Schematic Diagram (AU-717)
9396340	Rock Mounting Adaptor (each)
9276160	Rear Stand (each)

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THE BEST THAT
IS AVAILABLE

MEMO



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